

Alg. 2 ch. 5.3

FACToring EQUATIONS

$$\begin{array}{cc} x=2 & x=4 \\ -2 & -4 \\ -2 & -4 \end{array}$$

$$x-2=0 \quad x-4=0$$

$$(x-2)(x-4)=0$$

FOIL

$$x^2 - 4x - 2x + 8 = 0$$

$$x^2 - 6x + 8 = 0$$

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WE HAVE TO COME UP WITH
TWO NUMBERS:

- WHEN WE ADD THEM, WE
GET THE NUMBER IN FRONT OF x
- WHEN WE MULTIPLY THEM,
WE GET CONSTANT

$$x^2 - \underline{6}x + \underline{\underline{8}} = 0$$

① GUESS $-2; -4$

② CHECK

ADD $-2 + -4 = -\underline{6}$

MULTIPLY $(-2)(-4) = \underline{\underline{8}}$

$$(x-2)(x-4) = 0$$

$$x-2=0$$

$$x=2$$

$$x-4=0$$

$$x=4$$

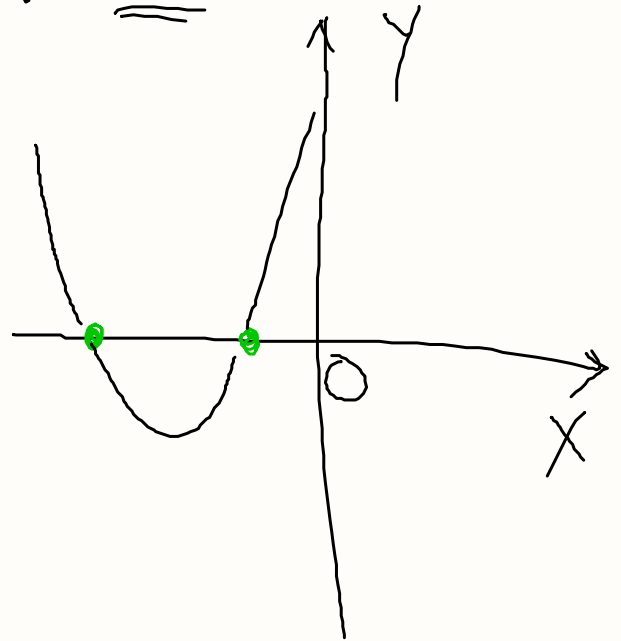
$$x^2 + \underline{12}x + \underline{27} = 0$$

GUESS: 9, 3

CHECK $9 + 3 = \underline{12}$; $9 \cdot 3 = \underline{27}$

$$(x+9)(x+3) = 0$$

$$x = -9 \quad x = -3$$



$$x^2 - \underline{15}x - \underline{54} = 0$$

GUESS: $-18, 3$

$$\text{CHECK: } -18 + 3 = \underline{-15}$$

$$-18 \cdot 3 = \underline{-54}$$

$$(x - 18)(x + 3) = 0$$

$$x - 18 = 0$$

$$+18 \quad +18$$

$$x = 18$$

$$x + 3 = 0$$

$$-3 \quad -3$$

$$x = -3$$

PRACTICE p. 297 79, 83, 85, 89, 91

$$\begin{aligned}\#89 \quad 24 + 8t - 2t^2 &= -2(-12 - 4t + t^2) = \\ &= -2(t^2 - 4t - 12)\end{aligned}$$

$$\begin{aligned}\#91 \quad 5x^2 + 30x + 40 &= \\ &= 5(x^2 + 6x + 8)\end{aligned}$$

HOME p. 297 #78, 80, 82, 84, 88

#85 $x^2 - 3x - 40 = 0$

$-8, 5$

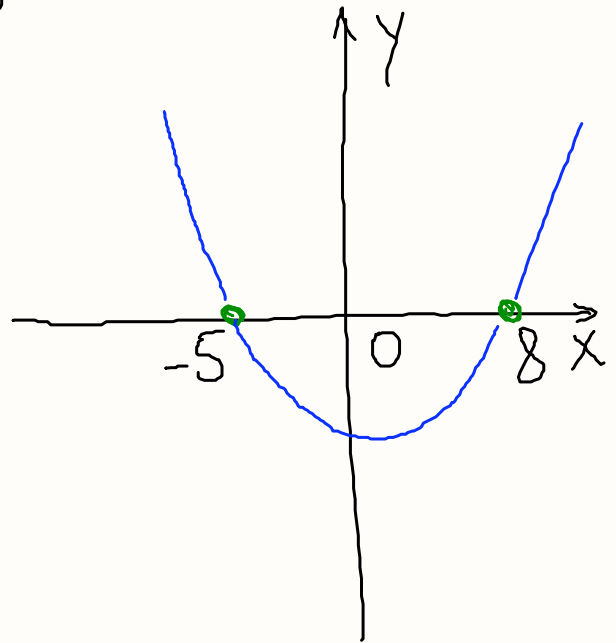
$-8 + 5 = -3$

$-8 \cdot 5 = -40$

$x_1 = +8$ $x_2 = 5$

$8^2 - 3 \cdot 8 - 40 = 0$

$64 - 24 - 40 = 0$



p. 296

43-49 odd

$$x - 2 = 0$$

$$x = 2$$

$$x_1 = 2$$

$$x_2 = 3$$

$$x^2 - 5x + 6 = 0$$

$$-2 + -3 = -5$$

$$(-2)(-3) = 6$$